CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory
An ISO 9001:2008 Certified Company
NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

Job No.: CTCE/BBMP/W.No.08/KRIDL/SDBC/Sp_Wa/2013-14 09.05.2014

Specific Gravity And Water Absorption Test

IS: 2386 Part III

Client	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
Agency	**Technical Manager,** KRIDL, Bangalore.
Name of the Work	Improvements to roads and drains at De-Enclave in Ward No.08, BBMP, Bangalore.
Reference	AEE/KH/439/2014-15
Type of Mix	Semi Dense Bituminous Concrete
Source / Location	Hotmix Plant, Bangalore
Date of Testing	09.05.2014

Sl. No.	Details	Notation	Test Number			Mean Value
			Test 1	Test 2	Test 3	
1	Weight of aggregate suspended in water with the basket	W_1 g	2021	2022	2023	
2	Weight of basket suspended in water	W_2 g	755	2020	755	
3	Weight of saturated aggregate in water	$(W_1 - W_2) = W_s$ g	1266	1267	1268	
4	Weight of saturated surface dry aggregate in air	W_3 g	2015	2016	2015	
5	Weight of water equal to the volume of the aggregate	$(W_3 - W_S)$ g	749	749	747	
6	Weight of oven dried aggregate	W_4 g	1999	1998	2000	
7	Specific Gravity	$W_4/(W_3-W_S)$	2.669	2.668	2.677	2.671
8	Apparent Specific gravity	$W_4/(W_4-W_S)$	2.727	2.733	2.732	2.731
9	Water Absorption	$((W_3-W_4)*100)/W_4$	0.80%	0.90%	0.75%	0.82%

Comments:

→ Maximum allowable Aggregate Water absorption value for Semi Dense Bituminous Concrete is 2.0%

Note:

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Job No.: CTCE/BBMP/W.No.08/KRIDL/WMM/S-T/2014-15 30.04.2014

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
Agency	**Technical Manager,** KRIDL, Bangalore.
Name of Work	Improvements to roads and drains at De-Enclave in Ward No.08, BBMP, Bangalore.
Reference	AEE/KH/439/2014-15
Technical Reference	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	30.04.2014

Result : Flakiness Index = **11.25%**

Elongation Index = **13.12%**

Result : Combined Flakiness & Elongation index **24.37%**

Comments:

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%

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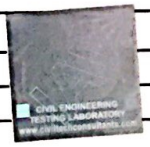
Aggregate Impact Value

IS: 2386 Part IV

Client	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
Agency	**Technical Manager,** KRIDL, Bangalore.
Name of the Work	Improvements to roads and drains at De-Enclave in Ward No.08, BBMP, Bangalore.
Reference	AEE/KH/439/2014-15
Source / Location	WMM Plant
Type of Mix	Wet Mix macadam
Date of Testing	30.04.2014



Sl No.	Details	Trial No. 1	Trial No. 2	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	385	386	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	85	86	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	300	300	
4	Aggregate Impact value = percent fines	22.08	22.28	
	100* (W_2/W_1)%			22.18

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

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Job No.: CTCE/BBMP/W.No.08/KRIDL /STEEL/2013-14

02.04.2014

TEST REPORT ON REINFORCEMENT STEEL

Client	:	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
Agency	:	**Technical Manager,** KRIDL, Bangalore.
Name of the Work	:	Improvements to roads and drains at De-Enclave in Ward No.08, BBMP, Bangalore.
Reference	:	AEE/KH/439/2014-15
Date of Test	:	02.04.2014
Technical Reference	:	IS: 1786-2008

Sl. No	Nominal size (dia) (mm)	Mass per metre (Kg/mtr)	TENSILE STRENGTH			Bend Test	Rebend Test
			0.20% proof stress/Yield stress N/mm^2	Tensile strength (Ultimate stress) N/mm^2	Elongation percent gauge length		
1	10	0.62	513	556	13.20	O.K	O.K

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Job No.: CTCE/BBMP/W.No.08/KRIDL/SAND/2013-14 : 24.03.2014

TEST REPORT ON FINE AGGREGATES
IS 383-1970 (RA- 2002)

Client : **Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager,** KRIDL, Bangalore.

Name of Work : Improvements to roads and drains at De-Enclave in Ward No.08, BBMP, Bangalore.

Reference : AEE/KH/439/2014-15

Date of Testing : 24.03.2014

Material : Sand Total Wt. of Aggregates in gms **1000**

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits For Zone-II
10	0	0	0	100	100
4.75	65	6.50	6.50	93.5	90-100
2.36	163	16.30	22.80	77.2	75-100
1.18	190	19.00	41.80	58.2	55-90
600 Micron	200	20.00	61.80	38.2	35-59
300 Micron	200	20.00	81.80	18.2	8-30
150 Micron	120	12.00	93.80	6.2	0-10

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Job No.: CTCE/BBMP/W.No.08/KRIDL/CEMENT/2013-14 Date: 24.03.2014

TEST REPORT

CLIENT	:	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
AGENCY	:	**Technical Manager,** KRIDL, Bangalore.
NAME OF THE WORK	:	Improvements to roads and drains at De-Enclave in Ward No.08, BBMP, Bangalore.
REFERENCE	:	AEE/KH/439/2014-15
SAMPLE ID	:	CEMENT
SAMPLES SUPPLIED BY	:	AGENCY

The results of the tests conducted on the cement sample are as follows:

Sl.No	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 1989-2013
1	Standard Consistency	IS-4031 (Part -4)	29.50 %	-
2	a) Initial Setting Time	IS-4031 (Part -5)	135 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part -5)	470 Minutes	Not More than 600 Minutes
3	Soundness by the Le-Chatelier method	IS-4031 (Part 3)	1 mm	Not more than 10 mm

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